Detector
Field Test

Minelab Sovereign GT

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When news first trickled down that Minelab were introducing another Sovereign model I was very interested as I have been a dedicated Sovereign user for many years. It is apparent that Minelab listen to their customers because the new Sovereign GT model incorporates some new features and a few older ones from the past that have made a welcome return on this latest 2005 model.

The new Sovereign GT is now in a very attractive blue and the controls are all clearly marked in white lettering.

I eventually acquired this new machine, and what follows is a short report regarding some of the time I have spent with it. For the purpose of this test I have dispensed with some of the usual stuff regarding controls, set up etc, as I figure nearly everyone will be familiar with one or other of the Sovereign models by now.

The new features on the GT include a re-designed digital meter and new bent shaft system. Besides improvements in balance and to the circuitry, some very good and useful features have been built into this latest model. Surprisingly, some of the new features were actually on the very first Sovereign model but have been reintroduced as a result of consumer demand. In these days of rapid harvesting and replanting, dealing with apparently "worked-out" sites, and lots of competition from other searchers, anything that will help to increase in-ground depths is very welcome.

The GT has the ability to outclass all other previous Sovereign models. How can it do this? I will explain below.

Iron Mask On/Off

A fundamental problem for most conventional detectors is their inability to recognise a valuable target when it is located near a ferrous item. This is a particular problem in areas with heavy trash contamination. The Sovereign GT using Iron Mask/On is particularly good at making the distinction between a non-ferrous target and iron trash - recognising the non-ferrous target and still providing a positive signal.

With Iron Mask/On search depth can be greater and non-ferrous targets located more reliably amongst ferrous trash. However, with Iron Mask/On, the detector may give the occasional "beep" on large ferrous targets and the threshold may not be stable. For this reason beginners with the GT may prefer to detect with the Iron Mask/Off. Also, when discriminating in mineralised soils, Iron Mask/Off may be the preferred mode.

Silent Search/Threshold

When in the discriminate mode, the Sovereign GT will vary the tone of an audio signal depending on the conductivity of the target (eg a highly conductive target will produce a high pitched tone, while a less conductive item - such as a worn and thin hammered coin or piece of low-grade foil - will produce a lower pitched tone.) The advantage of the GT over other detectors is that the tone of the threshold will also change. After the target signal is heard, the threshold "hum" will return in a pitch similar to the pitch of the signal. When the target signal is nulled (goes silent momentarily) due to discrimination or notching, the threshold will again return in the higher or lower pitch of the target's conductivity.

This can be a useful feature as not only will you know when you pass over iron trash, but you will also be able to hear the returning threshold tones of the higher non-ferrous items you have chosen to discriminate against and can estimate the conductivity that they have.

Another advantage of the threshold-based discriminate mode is that on occasions the only thing that may alert you to the presence of a very deep target is a change in threshold pitch. This is more common than you might think, especially on junky sites.

For new users of the GT and BBS technology, this may be a bit confusing initially. So, to simplify things a little, Minelab have added a Silent Search discriminate option to the Sovereign GT. In this mode targets will still produce different tones based on conductivity but you will not hear the changes in threshold tone or the nulling (silencing) of discriminated-out targets. A slightly faster sweep speed is also possible. This makes the Silent Search mode ideal in areas of low target concentrations such as the wet sand areas of beaches where ground coverage is just as important as recovering the really deep targets. To operate in the Silent Search mode you need to start with the switch in Threshold position and, using the threshold control, lower the level until it is just audible. Once

you are at this low audio level flick the switch to Silent Search and the threshold will disappear.

Ground Balance Switch (Track/Fix/Pinpoint)

The most important addition and perhaps the really big difference between the GT and the previous Sovereigns is the inclusion of a Ground Balance switch (Track/Fix/Pinpoint). When to use the various settings is explained here, but this brief explanation should be taken only as a general rule and could be subject to altering and working in different settings as conditions change in the field.

All-Metal

When operating in All-Metal the new Accu-Track automatic ground balancing system is operating to overcome the variable effects of mineralised soils. This means that the Sovereign GT can now be used for successful gold nugget searching, as well as coinshooting in parks and on beaches.

Disc Mode

In this mode the GT uses digital filtering to compensate for ground effect and the Track/Pinpoint function is disabled.

Track

When the detector is switched to the track position it continuously analyses the ground and resets the ground balance to compensate for changes in the mineral content. This position is ideal for areas where the ground compensation is changing rapidly.

Fixed

The fixed position holds the ground balance at the last setting found while in Track, and is suited to areas where the ground conditions are more constant. The Fixed position will often give more depth than Track.

Ground Balancing In Mineralised Soils

In the All Metal mode place the switch to Track, and then raise and lower the coil between 2cm-15cm above the ground. As the detector compensates for the ground minerals present the threshold will begin to stabilise, producing a steady tone after a few pumps of the coil. This procedure might take a bit longer if the ground is heavily mineralised. Once you have achieved ground balance switch into Fixed mode and start detecting. From time to time check to see if you may need to re-ground balance. In highly variable ground it is better to stay in Track.

(Note: If searching in Track it is possible, with repeated sweeps across a target, to tune out a weak signal. So, always switch to Pinpoint or Fixed to recover a target).

Ground Balancing In Non-Mineralised Soils

Searching in All-Metal on saltwater beaches is a great way to maximise depth. Begin with the Sensitivity in Auto and select the Track position. Detect as normal for about 30ft or so and then switch into the Fixed position. If the detector remains stable you can change from Auto into Manual to get the best depth (and then check your signals in Discrimination).

Pinpoint

Pinpoint is a specialised position for precise location of targets as it gives a short signal (compared to that of the signal in Disc Mode). This helps the searcher to zero in exactly on the target for quick recoveries and to minimise ground disturbance. Do *not* search in Pinpoint as the ground balance is disabled and the detector can become erratic.

New "DigiSearch" DTI Meter

A Digital Target Indicator (DTI) meter for the Sovereign GT is available as an accessory. This provides a numeric display of the target ID tones produced by the detector. What this literally means is that the meter displays numbers, in either two or three digits for non-ferrous items, which relates directly to the conductivity of a particular target. Using BBS technology iron items cause the threshold to null out and the meter can show the minus sign with four digits to the right of it. The meter has no negative effects on the operation of the detector and does not need an additional power source. It is powered by the detector's battery. However, the operator needs to be aware that some similar targets may vary in readings because of changes in composition. For example, gold rings will produce different readings depending on the purity of the gold and the size of the band. Also, similar coins minted in different years may also produce different readings.

A new light blue decal was added to the meter and the digital numeric display has also been modified to produce fewer numbers than existing Minelab meters. This helps make it easier to differentiate fine changes in readouts between some targets with similar conductivities (ie old ring pulls and gold rings).

Beach Trials

After familiarising myself with the controls of the GT, I felt that a trip to the beach was in order. I found the detector to be just as good as previous Sovereigns over salt wet sand, a particular area that

A selection of items found during the Field Test.

does not suit a lot of other detectors. With the added bonus of "Accu-Trak" it is now possible to work in the All-Metal mode the entire time.

For most of these tests I worked in discrimination mode, and pinpointed the location of all signals in all-metal. Working along close to the Low Water line I found the sensitivity to be very good, and some very small and thin targets were found.

A beautiful round, mellow tone produced an ordinary looking 9ct gold signet ring from about the 10in level. It showed 136 on the digital meter. One loud signal in Disc produced another decent all-metal signal and at the 5in level a copper rivet from a pair of denim jeans was found. It would have been found had it been deeper still.

The next day saw me back again. In another area of the beach about a dozen coins came up mixed in with a few aluminium tabs. One really loud signal resulted in a large lead weight from about 18in depth, and several thin fishing hooks were found at the other end of the scale.

Inland Trials

It was becoming clear to me that the GT appeared to have the edge over other Sovereign models, and this was reinforced from a series of tests I carried out in the woods and pasture fields.

A buddy, Dave McVeigh, accompanied me on my first search, a riverbank site that leads away into old woodland. I hadn't been to the place for years due to the finds drying up and as far as I could remember, I had never achieved depth in the ground conditions present.

I therefore wasn't expecting much when, in a small clearing, I ground balanced and began to scan the ground. Within a few steps the GT gave a loud signal; when I switched to pinpoint it was still there but somewhat fainter. When I carefully dug down into the soft black earth I met with some thin but tough roots.

After taking out about 6in of earth I again passed the coil over the hole in pinpoint mode; the faint sound was still there. I was now down to about 8in and, wanting to limit the disturbance to the ground, I continued to prise at the edge of the hole where I carefully extracted more soil. I then saw a green coin fall over on the side as the soil was dislodged. It was an old George IV penny. The extremely corroded coin was at 10in deep in very acidic soil - it had been there a long time entwined in the roots.

Just a few moments later another copper coin from 1825 came up from about the 7in level. I therefore knew that I was onto something good here as in the past these coins had been completely missed. Before digging any more targets I carefully searched the area between the trees and marked promising signals. Dave then switched on his Elite and I turned off my GT. Even though we both had Noise Cancel on both detectors I didn't want any fluttering of the threshold or any interference for this experiment.

Dave began to scan the area and we listened very carefully to the responses. I had written down the number of targets heard. We then dug the targets to see what they were. One looked like a tiny BB pellet at a depth of about 6in. The GT gave a good response, even in all-metal, but there was only a slight "whimper" from the Elite.

Another signal, which the Elite responded to in a half-hearted manner but which the GT signalled loudly, was a small, flattened gold coloured aluminium square showing the month of August. These had been popular years back attached to watch straps.

Some more time was spent on the site and other pre-decimal coins were recovered. As with most experienced detectorists, pre-decimal coppers do not do a great deal for me. But what did excite was the fact that the GT found them at depths where they had been missed previously.

In the shadow of a large old tree a few signals merged together. Switching to pinpoint I was able to isolate them smoothly. I zeroed in on the separate targets. One of them caused a heart skip moment as I saw the flash of gold slide towards me. The target, rather than gold, turned out to be a small base metal 5 franc French coin; I had been fooled by these on a few previous occasions.

The following Sunday saw me at a new site that showed promise. The location had been scouted prior to my visit by a friend and permission for both of us to search had also been granted. I didn't know what to expect. On arrival I found that the field was still rough ploughed. After a while I was driven mad by iron sounds so I experimented with the Silent Search setting. This was much better. Gone were the sounds of the fluctuating threshold that were causing me some annoyance.

It is sometimes difficult to work to a comfortable level over rough plough as the threshold can become choppy due to changing soil levels. I therefore chose to set the GT to the Track position and All-Metal where a smooth threshold was maintained. The detector remained stable with these settings for the few hours on site.

One soft signal that sounded like a small deep target proved a bit elusive to pinpoint properly, and I discovered a fantastic new way to get it right. Instead of switching into All-Metal and Pinpoint like I normally do with my XS-2a, I found that by switching to Fixed and then switching into All-Metal the GT makes sounds unlike any other Sovereign I have used before. It's a mixture of a rasp and a croak and is usually heard after the coil's hot spot is just clearing the centre of the target. After a few minutes of digging a bit deeper, a tiny silver Venetian soldino came up, which must have been either on edge or at a steep angle.

Summary

How do you beat a Sovereign? In my view, only with another and better Sovereign. How is it so much better than an Elite or the XS-2a Pro that, I must admit, remains one of my all-time favourites? I have pondered that question for a while and can only surmise that with those detectors the ground balance is automatically set to handle average conditions found in various locations and there is little that you can change about it. However, with the introduction of the new Sovereign GT with Automatic Ground Balance and the ability to manually ground balance to the optimum setting on every site (including salt water beaches) it is possible to override the balanced factory setting to enable an operator to get the best balanced settings that could possibly be achieved at a chosen site - whether beach, grass field, or plough.

Manually ground balancing definitely has the edge over a fixed setting or one imbedded into the electronics at the factory. This explains why, when searching with Dave, the signals were so much better and more cleanly pronounced with the GT than his Elite. I had been able to ground balance precisely to the slight mineralised content of the acidic soil at the particular location.

He relied on his Elite to do the bulk of his work for him, including finding a suitable setting at which to work; but the balance achieved had not been as suitable to the ground conditions as my GT set manually.

Of course, all this is just my own opinion based on what I saw and heard over the few weeks I spent testing the new machine on a variety of soils. But I think it is a valid argument. TH